Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

Anemia in pregnancy.

Bibliographic Source(s)

American College of Obstetricians and Gynecologists (ACOG). Anemia in pregnancy. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2008 Jul. 7 p. (ACOG practice bulletin; no. 95). [32 references]

Guideline Status

This is the current release of the guideline.

The American College of Obstetricians and Gynecologists (ACOG) reaffirmed the currency of this guideline in 2013.

Recommendations

Major Recommendations

The grades of evidence (I-III) and levels of recommendation (A-C) are defined at the end of the "Major Recommendations" field.

The following conclusion is based on good and consistent scientific evidence (Level A):

Iron supplementation decreases the prevalence of maternal anemia at delivery.

The following recommendations and conclusions are based on limited or inconsistent evidence (Level B):

Iron deficiency anemia during pregnancy has been associated with an increased risk of low birth weight, preterm delivery, and perinatal mortality.
Severe anemia with maternal hemoglobin (Hgb) levels less than 6 g/dL has been associated with abnormal fetal oxygenation resulting in nonreassuring fetal heart rate patterns, reduced amniotic fluid volume, fetal cerebral vasodilatation, and fetal death. Thus, maternal transfusion should be considered for fetal indications.

The following recommendations are based primarily on consensus and expert opinion (Level C):

All pregnant women should be screened for anemia, and those with iron deficiency anemia should be treated with supplemental iron, in addition to prenatal vitamins.
Patients with anemia other than iron deficiency anemia should be further evaluated.
Failure to respond to iron therapy should prompt further investigation and may suggest an incorrect diagnosis, coexisting disease,

malabsorption (sometimes caused by the use of enteric-coated tablets or concomitant use of antacids), noncompliance, or blood loss.

Definitions:

Grades of Evidence

I: Evidence obtained from at least one properly designed randomized controlled trial.

II-1: Evidence obtained from well-designed controlled trials without randomization.

II-2: Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group.

II-3: Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Levels of Recommendations

Level A - Recommendations are based on good and consistent scientific evidence.

Level B - Recommendations are based on limited or inconsistent scientific evidence.

Level C - Recommendations are based primarily on consensus and expert opinion.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

- Anemia
- Pregnancy

Guideline Category

Diagnosis

Evaluation

Management

Prevention

Screening

Treatment

Clinical Specialty

Hematology

Obstetrics and Gynecology

Intended Users

Physicians

Guideline Objective(s)

To aid practitioners in making decisions about appropriate obstetric and gynecologic care
To provide a brief overview of the causes of anemia in pregnancy and review iron requirements
To provide recommendations for screening and clinical management of anemia during pregnancy

Target Population

Pregnant women

Interventions and Practices Considered

Iron supplementation
Screening for anemia during pregnancy
Maternal transfusion in case of severe anemia
Parenteral iron for patients who cannot tolerate oral iron: iron dextran or ferrous sucrose
Autologous transfusion
Prenatal vitamin supplementation

Major Outcomes Considered

Effectiveness of screening for anemia during pregnancy
Effectiveness of anemia prophylaxis during pregnancy

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

2008 Original Guideline

The MEDLINE database, the Cochrane Library, and the American College of Obstetricians and Gynecologists' (ACOG's) own internal resources and documents were used to conduct a literature search to locate relevant articles published between January 1985 and September 2007. The search was restricted to articles published in the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document. Guidelines published by organizations or institutions such as the National Institutes of Health and the American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles.

2013 Reaffirmation

The NCBI database was searched from 2008 to 2013. Committee members conducted a literature search with the assistance from the ACOG Resource Center staff who routinely perform the Practice Bulletin literature searches.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force:

I: Evidence obtained from at least one properly designed randomized controlled trial.

II-1: Evidence obtained from well-designed controlled trials without randomization.

II-2: Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group.

II-3: Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

2008 Original Guideline

Analysis of available evidence was given priority in formulating recommendations. When reliable research was not available, expert opinions from obstetrician–gynecologists were used. See also the "Rating Scheme for the Strength of Recommendations" field regarding Grade C recommendations.

2013 Reaffirmation

The Committee on Practice Bulletins - Obstetrics met in March 2013 and reaffirmed this document. A committee member reviewed the document and new literature on the topic. The document was then reviewed by the committee and the committee agreed that it is current and accurate.

Rating Scheme for the Strength of the Recommendations

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A - Recommendations are based on good and consistent scientific evidence.

Level B - Recommendations are based on limited or inconsistent scientific evidence.

Level C - Recommendations are based primarily on consensus and expert opinion.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

Practice Bulletins are validated by two internal clinical review panels composed of practicing obstetrician-gynecologists generalists and sub-specialists. The final guidelines are also reviewed and approved by the American College of Obstetricians and Gynecologists (ACOG) Executive Board.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate evaluation and treatment of anemia in pregnancy
Iron supplementation decreases the prevalence of maternal anemia at delivery

Potential Harms

There is little evidence that iron supplementation results in morbidity beyond gastrointestinal symptoms, except in patients with hemochromatosis or certain other genetic disorders.
Anaphylactic reactions have been reported in 1% of patients receiving parenteral iron dextran.

Qualifying Statements

Qualifying Statements

These guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Audit Criteria/Indicators

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2008 Jul (reaffirmed 2013)

Guideline Developer(s)

American College of Obstetricians and Gynecologists - Medical Specialty Society

Source(s) of Funding

American College of Obstetricians and Gynecologists (ACOG)

Guideline Committee

American College of Obstetricians and Gynecologists (ACOG) Committee on Practice Bulletins - Obstetrics

Composition of Group That Authored the Guideline

Not stated

Financial Disclosures/Conflicts of Interest

Not stated

Guideline Status

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The American College of Obstetricians and Gynecologists (ACOG) reaffirmed the currency of this guideline in 2013.

Guideline Availability

Electronic copies: None available

Print copies: Available for purchase from the American College of Obstetricians and Gynecologists (ACOG) Distribution Center, PO Box 933104, Atlanta, GA 31193-3104; telephone, 800-762-2264, ext. 192; e-mail: sales@acog.org. The ACOG Bookstore is available online at the ACOG Web site.

Availability of Companion Documents

Proposed performance measures are included in the original guideline document.

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on January 5, 2008. The information was verified by the guideline developer on January 23, 2009. This summary was updated by ECRI Institute on October 29, 2009 following the U.S. Food and Drug Administration advisory on Dexferrum (iron dextran injection). The currency of the guideline was reaffirmed by the developer in 2013 and this summary was updated by ECRI Institute on March 7, 2014.

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